

Supplementary Material

1 Example items of the scales

SRQ, conflicts: How often did you and your sibling disagree or argue about something?

SRQ, closeness: How typical was it for you and your sibling to tell each other everything?

SRQ, parental partiality: Who did your parents favour more often, you or your sibling?

S-EMBU-A, rejection: It happened that my parents were sour or angry with me without letting me know the cause

S-EMBU-A, emotional warmth: If things went badly for me\ I then felt that my parents tried to comfort and encourage me

S-EMBU-A, overprotection: When I came home\ I then had to account for what I had been doing\ to my parents

SD3, Machiavellianism: Avoid direct conflict with others because they may be useful in the future.

SD3, narcissism: I know that I am special because everyone keeps telling me so.

SD3, psychopathy: Payback needs to be quick and nasty.

MCNS: I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others.

LSRP, primary psychopathy: Success is based on survival of the fittest; I am not concerned about the losers.

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LSRP, secondary psychopathy: I find that I am able to pursue one goal for a long time

BPI: Hearing voices talking about self

2 Supplementary Table 1. Means (M), standard deviations (SD), and internal reliabilities (Cronbach's α) of the scales used in Study 1. Results of Pearson's correlations.

	Sibling Relationship						Dark Triad traits					
	Closeness		Conflict		Parental partiality		Machiavellianism		Narcissism		Psychopathy	
	r	p	r	p	r	p	r	p	r	p	r	p
Conflict	.009	.923										
Parental partiality	-.022	.815	-.064	.495								
Machiavellianism	-.364	< .001	.345	< .001	-.027	.771						
Narcissism	.084	.366	.105	.261	-.283	.002	.125	.181				
Psychopathy	-.123	.185	.375	< .001	-.123	.185	.572	< .001	.294	.001		
M	3.18		2.24		2.95		25.72		23.61		19.97	
SD	0.79		0.82		0.50		6.17		5.81		5.36	
Cronbach's α	.95		.83		.78		.77		.73		.66	

3 Supplementary Table 2. Means (M), standard deviations (SD), and internal reliabilities (Cronbach's α) of the scales used in Study 2. Results of Pearson's correlations.

	Dark Triad traits				Sibling Relationship								Parenting										
	Machiavellianism		Narcissism		Psychopathy		Closeness		Conflict		Parental partiality		Paternal rejection		Paternal overprotection		Paternal emotional warmth		Maternal rejection		Maternal overprotection		Maternal emotional warmth
	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	
Narcissism	.438	< .001																					
Psychopathy	.616	< .001	.319	< .001																			
Closeness	-.258	.006	.020	.834	-.300	.001																	
Conflict	.213	.025	.184	.053	.369	< .001	-.230	.015															
Parental partiality	-.019	.846	-.073	.445	-.188	.048	.352	< .001	-.151	.114													
Paternal rejection	.024	.799	-.066	.491	.301	.001	-.164	.086	.290	.002	-.272	.004											
Paternal overprotection	.067	.488	.160	.094	.249	.008	-.085	.377	.211	.026	-.175	.066	.485	< .001									
Paternal emotional warmth	.078	.416	.353	< .001	-.177	.063	.259	.006	-.094	.324	.105	.274	-.377	< .001	-.017	.857							
Maternal rejection	.036	.710	-.181	.057	.334	< .001	-.235	.013	.120	.209	-.230	.015	.513	< .001	.148	.120	-.302	.001					
Maternal overprotection	.107	.265	.059	.541	.275	.003	-.119	.213	.209	.027	-.165	.084	.238	.012	.333	< .001	-.073	.444	.626	< .001			
Maternal emotional warmth	-.113	.238	.189	.047	-.346	< .001	.240	.011	-.045	.642	.036	.709	-.282	.003	-.170	.074	.649	< .001	-.446	< .001	-.126	.189	
M	28.27		25.41		24.14		3.23		3.02		2.89		1.44		1.81		2.63		1.51		2.06		2.89
SD	5.65		6.40		6.44		0.70		0.81		0.39		0.48		0.46		0.86		0.57		0.50		0.80
Cronbach's α	.67		.76		.70		.92		.78		.66		.75		.75		.90		.82		.71		.90

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4 **Supplementary Table 3.** Means (M), standard deviations (SD), and internal reliabilities (Cronbach's α) of the scales used in Study 3. Results of Pearson's correlations.

	Dark personality traits						Sibling relationship						Parenting													
	Primary psychopathy		Secondary psychopathy		Vulnerable narcissism		Borderline Personality Organization		Closeness		Conflict		Parental partiality		Paternal rejection		Paternal overprotection		Paternal emotional warmth		Maternal rejection		Maternal over-protection		Maternal emotional warmth	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p
Secondary psychopathy	.358	< .001																								
Vulnerable narcissism	.537	< .001	.649	< .001																						
Borderline Personality Organization	.407	< .001	.608	< .001	.682	< .001																				
Closeness	.002	.986	-.100	.297	-.090	.349	-.154	.108																		
Conflict	.237	.013	.138	.149	.179	.062	.220	.021	-.223	.019																
Parental partiality	.156	.104	-.145	.1322	-.111	.249	-.285	.003	.260	.006	-.034	.721														
Paternal rejection	-.105	.237	.083	.391	.188	.050	.235	.013	-.150	.117	.041	.672	-.580	<.001												
Paternal overprotection	-.158	.099	-.009	.925	.140	.143	.189	.049	.153	.111	-.046	.633	-.202	.034	.470	<.001										
Paternal emotional warmth	.049	.612	-.093	.334	-.112	.245	-.184	.055	.521	< .001	-.084	.384	.366	<.001	-.558	<.001	-.053	.585								
Maternal rejection	.163	.089	.130	.175	.200	.036	.315	< .001	-.262	.031	.206	.031	-.548	<.001	.343	<.001	.227	.017	-.204	.033						
Maternal overprotection	.115	.233	.118	.219	.324	< .001	.271	.004	-.183	.056	.205	.031	-.206	.031	.206	.031	.293	.002	-.171	.074	.543	<.001				
Maternal emotional warmth	-.112	.246	-.152	.113	-.132	.168	-.260	.006	.465	< .001	-.068	.481	.400	<.001	-.293	.002	-.106	.270	.586	<.001	-.519	<.001	-.128	.182		
M	29.78		18.90		63.26		73.56		3.08		3.00		2.86		1.44		1.74		2.53		1.59		2.01		2.73	
SD	7.37		4.93		14.58		17.58		0.77		0.80		0.53		0.52		0.47		0.92		0.65		0.58		0.87	
Cronbach's α	.85		.77		.87		.94		.94		.81		.65		.83		.81		.93		.89		.84		.91	

5 Supplementary Table 4. Sibling relationship variables regressed on Machiavellianism in Study 1; results of multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.530	0.281	11.04	4	113	<.001
2	0.561	0.315	7.23	7	110	<.001

Model Comparisons

Comparison						
Model	Model	ΔR ²	F	df1	df2	p
1	- 2	0.0340	1.82	3	110	0.147

Model 1 Coefficients - Machiavellianism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	31.413	3.986	7.880	<.001			
Sex:							
female – male	-2.107	1.278	-1.649	0.102	-0.3389	-0.746	0.0682
Closeness	-2.815	0.630	-4.468	<.001	-0.3588	-0.518	-0.1997
Conflicts	2.632	0.612	4.303	<.001	0.3444	0.186	0.5030
Parental partiality	-0.332	0.990	-0.335	0.738	-0.0268	-0.185	0.1318

^a Represents reference level

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Model 2 Coefficients - Machiavellianism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	32.4623	4.001	8.113	<.001			
Sex:							
female – male	-2.2533	1.276	-1.765	0.080	-0.3624	-0.769	0.0444
Closeness	-2.6868	0.626	-4.291	<.001	-0.3424	-0.501	-0.1843
Conflicts	2.6192	0.626	4.182	<.001	0.3427	0.180	0.5051
Parental partiality	-0.4373	1.005	-0.435	0.664	-0.0353	-0.196	0.1256
Age difference	0.0584	0.168	0.348	0.729	0.0278	-0.130	0.1859
Sex of sibling:							
female – male	-2.2549	0.990	-2.278	0.025	-0.3626	-0.678	-0.0472
Birth order:							
2 – 1	-0.1482	1.044	-0.142	0.887	-0.0238	-0.357	0.3090

^a Represents reference level

6 **Supplementary Table 5.** Sibling relationship variables regressed on narcissism in Study 1; results of multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.345	0.119	3.81	4	113	0.006
2	0.400	0.160	3.00	7	110	0.006

Model Comparisons

Comparison						
Model	Model	ΔR ²	F	df1	df2	p
1	- 2	0.0412	1.80	3	110	0.152

Model 1 Coefficients - Narcissism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	31.695	4.144	7.648	<.001			
Sex:							
female – male	-1.862	1.328	-1.402	0.164	-0.3189	-0.7696	0.132
Closeness	0.610	0.655	0.931	0.354	0.0827	-0.0934	0.259
Conflicts	0.621	0.636	0.976	0.331	0.0865	-0.0890	0.262
Parental partiality	-3.373	1.029	-3.276	0.001	-0.2903	-0.4658	-0.115

^a Represents reference level

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Model 2 Coefficients - Narcissism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	32.645	4.161	7.846	< .001			
Sex:							
female – male	-2.100	1.327	-1.582	0.117	-0.3596	-0.8101	0.09089
Closeness	0.713	0.651	1.095	0.276	0.0967	-0.0784	0.27186
Conflicts	0.553	0.651	0.849	0.398	0.0770	-0.1028	0.25687
Parental partiality	-3.486	1.045	-3.336	0.001	-0.3001	-0.4783	-0.12181
Age difference	0.176	0.175	1.008	0.316	0.0891	-0.0860	0.26417
Sex of sibling:							
female – male	-2.015	1.029	-1.958	0.053	-0.3450	-0.6944	0.00427
Birth order:							
2 – 1	-0.585	1.086	-0.538	0.591	-0.1001	-0.4687	0.26847

^a Represents reference level

7 Supplementary Table 6. Sibling relationship variables regressed on psychopathy in Study 1; results of multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.449	0.201	7.12	4	113	<.001
2	0.533	0.285	6.25	7	110	<.001

Model Comparisons

Comparison						
Model	Model	ΔR ²	F	df1	df2	p
1	- 2	0.0833	4.27	3	110	0.007

Model 1 Coefficients - Psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	22.087	3.614	6.11	<.001			
Sex:							
female – male	-2.410	1.158	-2.08	0.040	-0.451	-0.880	-0.0214
Closeness	-0.743	0.571	-1.30	0.196	-0.110	-0.278	0.0576
Conflicts	2.391	0.555	4.31	<.001	0.364	0.196	0.5308
Parental partiality	-1.069	0.898	-1.19	0.236	-0.100	-0.268	0.0666

^a Represents reference level

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Model 2 Coefficients - Psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	23.0378	3.517	6.550	<.001			
Sex:							
female – male	-2.4074	1.122	-2.145	0.034	-0.4501	-0.866	-0.0343
Closeness	-0.5632	0.550	-1.023	0.308	-0.0834	-0.245	0.0782
Conflicts	2.5478	0.551	4.628	<.001	0.3876	0.222	0.5535
Parental partiality	-1.3801	0.883	-1.562	0.121	-0.1297	-0.294	0.0348
Age difference	0.0393	0.148	0.266	0.791	0.0217	-0.140	0.1833
Birth order:							
2 – 1	0.9675	0.918	1.054	0.294	0.1809	-0.159	0.5211
Sex of sibling:							
female – male	-3.0530	0.870	-3.509	<.001	-0.5708	-0.893	-0.2484

^a Represents reference level

8 Supplementary Table 7. Sibling relationship variables and parenting variables regressed on Machiavellianism in Study 2; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.372	0.138	4.25	4	106	0.003
2	0.476	0.227	2.94	10	100	0.003
3	0.477	0.227	2.40	12	98	0.009

Model Comparisons

Comparison							
Model	Model	ΔR ²	F	df1	df2	p	
1	- 2	0.0886	1.9100	6	100	0.086	
2	- 3	5.30e-4	0.0336	2	98	0.967	

Model 1 Coefficients - Machiavellianism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	29.25	4.909	5.959	< .001			
Sex:							
female – male	-2.25	1.029	-2.188	0.031	-0.3988	-0.76024	-0.0374
Closeness	-2.02	0.791	-2.550	0.012	-0.2503	-0.44483	-0.0557
Conflicts	1.24	0.647	1.922	0.057	0.1787	-0.00567	0.3631
Parental partiality	1.05	1.409	0.743	0.459	0.0722	-0.12057	0.2650

^a Represents reference level

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Model 2 Coefficients - Machiavellianism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	29.811	6.354	4.691	<.001			
Sex:							
female – male	-2.512	1.050	-2.393	0.019	-0.4450	-0.8141	-0.0760
Closeness	-2.240	0.806	-2.780	0.006	-0.2781	-0.4766	-0.0796
Conflicts	1.046	0.671	1.558	0.122	0.1502	-0.0411	0.3416
Parental partiality	0.774	1.425	0.543	0.588	0.0534	-0.1417	0.2484
Paternal rejection	1.545	1.678	0.921	0.359	0.1315	-0.1519	0.4150
Paternal emotional closeness	2.470	0.856	2.885	0.005	0.3773	0.1178	0.6369
Paternal overprotection	-1.084	1.544	-0.702	0.484	-0.0878	-0.3360	0.1604
Maternal rejection	-2.313	1.642	-1.409	0.162	-0.2332	-0.5618	0.0953
Maternal emotional closeness	-2.457	0.976	-2.519	0.013	-0.3472	-0.6207	-0.0737
Maternal overprotection	2.680	1.553	1.726	0.087	0.2356	-0.0352	0.5063

^a Represents reference level

Model 3 Coefficients - Machiavellianism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	29.7136	6.444	4.6109	< .001			
Sex:							
female – male	-2.5196	1.088	-2.3150	0.023	-0.44630	-0.8289	-0.0637
Closeness	-2.2089	0.849	-2.6030	0.011	-0.27420	-0.4832	-0.0652
Conflicts	1.0430	0.679	1.5356	0.128	0.14987	-0.0438	0.3435
Parental partiality	0.7822	1.453	0.5383	0.592	0.05396	-0.1450	0.2529
Paternal rejection	1.5208	1.699	0.8951	0.373	0.12952	-0.1576	0.4167
Paternal emotional closeness	2.4212	0.885	2.7348	0.007	0.36987	0.1015	0.6383
Paternal overprotection	-1.0749	1.562	-0.6881	0.493	-0.08707	-0.3382	0.1640
Maternal rejection	-2.3223	1.665	-1.3946	0.166	-0.23421	-0.5675	0.0991
Maternal emotional closeness	-2.4452	0.988	-2.4748	0.015	-0.34554	-0.6226	-0.0685
Maternal overprotection	2.6781	1.568	1.7079	0.091	0.23538	-0.0381	0.5089
Number of siblings:							
2 – 1	0.2688	1.097	0.2450	0.807	0.04761	-0.3380	0.4332
3 – 1	-0.0181	1.807	-0.0100	0.992	-0.00321	-0.6382	0.6318

^a Represents reference level

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9 **Supplementary Table 8.** Sibling relationship variables and parenting variables regressed on Narcissism in Study 2; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.288	0.0832	2.41	4	106	0.054
2	0.533	0.2837	3.96	10	100	<.001
3	0.534	0.2847	3.25	12	98	<.001

Model Comparisons

Comparison							
Model		Model	ΔR^2	F	df1	df2	p
1	-	2	0.20046	4.6642	6	100	<.001
2	-	3	0.00101	0.0690	2	98	0.933

Model 1 Coefficients - Narcissism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	24.030	5.737	4.188	<.001			
Sex:							
female – male	-2.596	1.203	-2.158	0.033	-0.4058	-0.7786	-0.0330
Closeness	0.856	0.924	0.926	0.356	0.0938	-0.1069	0.2944
Conflicts	1.598	0.757	2.113	0.037	0.2027	0.0125	0.3929
Parental partiality	-1.648	1.647	-1.001	0.319	-0.1003	-0.2992	0.0985

^a Represents reference level

Model 2 Coefficients - Narcissism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	20.461	6.930	2.952	0.004			
Sex:							
female – male	-2.951	1.145	-2.577	0.011	-0.4613	-0.8165	-0.1061
Closeness	-0.137	0.879	-0.156	0.876	-0.0150	-0.2061	0.1760
Conflicts	1.286	0.732	1.757	0.082	0.1631	-0.0211	0.3473
Parental partiality	-1.882	1.554	-1.211	0.229	-0.1146	-0.3023	0.0732
Paternal rejection	1.185	1.830	0.647	0.519	0.0890	-0.1838	0.3619
Paternal emotional closeness	3.354	0.934	3.592	< .001	0.4522	0.2024	0.7020
Paternal overprotection	0.849	1.684	0.504	0.615	0.0607	-0.1782	0.2996
Maternal rejection	-3.750	1.791	-2.094	0.039	-0.3338	-0.6500	-0.0176
Maternal emotional closeness	-1.456	1.064	-1.369	0.174	-0.1816	-0.4449	0.0817
Maternal overprotection	3.101	1.694	1.831	0.070	0.2405	-0.0201	0.5012

^a Represents reference level

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Model 3 Coefficients - Narcissism

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	20.3645	7.026	2.8985	0.005			
Sex:							
female – male	-2.9881	1.187	-2.5182	0.013	-0.46714	-0.8353	-0.0990
Closeness	-0.0674	0.925	-0.0728	0.942	-0.00738	-0.2085	0.1938
Conflicts	1.2868	0.741	1.7377	0.085	0.16318	-0.0232	0.3495
Parental partiality	-1.8907	1.584	-1.1935	0.236	-0.11512	-0.3065	0.0763
Paternal rejection	1.1391	1.852	0.6149	0.540	0.08562	-0.1907	0.3619
Paternal emotional closeness	3.2829	0.965	3.4011	< .001	0.44261	0.1844	0.7009
Paternal overprotection	0.8537	1.703	0.5013	0.617	0.06103	-0.1806	0.3026
Maternal rejection	-3.7485	1.816	-2.0647	0.042	-0.33365	-0.6543	-0.0130
Maternal emotional closeness	-1.4445	1.077	-1.3410	0.183	-0.18016	-0.4468	0.0865
Maternal overprotection	3.0962	1.710	1.8110	0.073	0.24017	-0.0230	0.5033
Number of siblings:							
2 – 1	0.3658	1.196	0.3059	0.760	0.05719	-0.3138	0.4282
3 – 1	-0.2227	1.970	-0.1131	0.910	-0.03482	-0.6459	0.5762

^a Represents reference level

9 Supplementary Table 8. Sibling relationship variables and parenting variables regressed on psychopathy in Study 2; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.459	0.210	7.06	4	106	<.001
2	0.604	0.364	5.73	10	100	<.001
3	0.625	0.390	5.22	12	98	<.001

Model Comparisons

Comparison							
Model	Model	ΔR ²	F	df1	df2	p	
1	- 2	0.1540	4.04	6	100	0.001	
2	- 3	0.0258	2.07	2	98	0.132	

Model 1 Coefficients - Psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	27.71	5.357	5.173	<.001			
Sex:							
female – male	-1.90	1.123	-1.691	0.094	-0.2952	-0.641	0.0508
Closeness	-1.86	0.863	-2.156	0.033	-0.2026	-0.389	-0.0163
Conflicts	2.52	0.706	3.573	<.001	0.3181	0.142	0.4946
Parental partiality	-1.43	1.538	-0.931	0.354	-0.0867	-0.271	0.0979

^a Represents reference level

Supplementary Material

Model 2 Coefficients - Psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	22.589	6.568	3.439	<.001			
Sex:							
female – male	-2.920	1.085	-2.690	0.008	-0.4537	-0.7884	-0.1191
Closeness	-1.282	0.833	-1.539	0.127	-0.1396	-0.3195	0.0404
Conflicts	2.112	0.694	3.044	0.003	0.2663	0.0927	0.4398
Parental partiality	-0.976	1.473	-0.663	0.509	-0.0591	-0.2359	0.1178
Paternal rejection	1.153	1.734	0.665	0.508	0.0862	-0.1709	0.3432
Paternal emotional closeness	1.265	0.885	1.430	0.156	0.1696	-0.0657	0.4049
Paternal overprotection	1.015	1.596	0.636	0.526	0.0721	-0.1529	0.2972
Maternal rejection	0.702	1.697	0.413	0.680	0.0621	-0.2358	0.3600
Maternal emotional closeness	-2.707	1.008	-2.685	0.008	-0.3356	-0.5837	-0.0876
Maternal overprotection	1.785	1.605	1.113	0.269	0.1377	-0.1078	0.3832

^a Represents reference level

Model 3 Coefficients - Psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	21.939	6.527	3.361	0.001			
Sex:							
female – male	-3.039	1.102	-2.757	0.007	-0.4723	-0.8123	-0.1324
Closeness	-0.981	0.859	-1.141	0.257	-0.1068	-0.2925	0.0790
Conflicts	2.102	0.688	3.056	0.003	0.2650	0.0929	0.4370
Parental partiality	-0.961	1.472	-0.653	0.515	-0.0581	-0.2349	0.1186
Paternal rejection	0.942	1.721	0.547	0.585	0.0704	-0.1848	0.3255
Paternal emotional closeness	0.886	0.897	0.988	0.326	0.1187	-0.1198	0.3572
Paternal overprotection	1.067	1.582	0.674	0.502	0.0758	-0.1473	0.2989
Maternal rejection	0.665	1.687	0.394	0.694	0.0589	-0.2373	0.3550
Maternal emotional closeness	-2.628	1.001	-2.626	0.010	-0.3258	-0.5720	-0.0796
Maternal overprotection	1.765	1.588	1.111	0.269	0.1361	-0.1069	0.3791
Number of siblings:							
2 – 1	2.026	1.111	1.824	0.071	0.3148	-0.0278	0.6574
3 – 1	-0.611	1.830	-0.334	0.739	-0.0949	-0.6592	0.4693

^a Represents reference level

Supplementary Material

10 **Supplementary Table 9.** Sibling relationship variables and parenting variables regressed on primary psychopathy in Study 3; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.304	0.0922	2.67	4	105	0.036
2	0.458	0.2095	2.62	10	99	0.007
3	0.522	0.2720	2.54	14	95	0.004

Model Comparisons

Comparison							
Model	Model	ΔR ²	F	df1	df2	p	
1	- 2	0.1173	2.45	6	99	0.030	
2	- 3	0.0625	2.04	4	95	0.095	

Model 1 Coefficients - LSRP - primary psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	17.522	5.397	3.246	0.002			
Sex:							
female – male	-1.781	1.738	-1.025	0.308	-0.2418	-0.7096	0.226
Closeness	0.199	0.948	0.210	0.834	0.0208	-0.1754	0.217
Conflicts	2.253	0.876	2.570	0.012	0.2452	0.0560	0.434
Parental partiality	2.217	1.336	1.659	0.100	0.1599	-0.0312	0.351

^a Represents reference level

Model 2 Coefficients - LSRP - primary psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	9.31	8.266	1.126	0.263			
Sex:							
female – male	-1.71	1.761	-0.970	0.335	-0.2318	-0.70616	0.2425
Closeness	1.22	1.111	1.098	0.275	0.1272	-0.10263	0.3571
Conflicts	1.75	0.870	2.005	0.048	0.1900	0.00200	0.3780
Parental partiality	4.62	1.767	2.613	0.010	0.3328	0.08006	0.5856
Paternal rejection	1.69	2.181	0.774	0.441	0.1194	-0.18665	0.4254
Maternal rejection	2.68	1.806	1.487	0.140	0.2358	-0.07889	0.5505
Paternal overprotection	-3.88	1.814	-2.140	0.035	-0.2477	-0.47737	-0.0181
Maternal emotional warmth	-1.78	1.271	-1.404	0.163	-0.2096	-0.50588	0.0866
Maternal overprotection	1.02	1.562	0.655	0.514	0.0801	-0.16255	0.3227
Paternal emotional warmth	1.01	1.274	0.795	0.429	0.1258	-0.18822	0.4398

^a Represents reference level

Supplementary Material

Model 3 Coefficients - LSRP - primary psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	6.896	8.145	0.847	0.399			
Sex:							
female – male	-0.678	1.855	-0.365	0.716	-0.0921	-0.59216	0.4080
Closeness	1.750	1.173	1.491	0.139	0.1825	-0.06048	0.4255
Conflicts	1.774	0.853	2.078	0.040	0.1931	0.00863	0.3775
Parental partiality	4.547	1.740	2.613	0.010	0.3278	0.07878	0.5768
Paternal rejection	2.116	2.175	0.973	0.333	0.1497	-0.15569	0.4550
Maternal rejection	2.174	1.820	1.195	0.235	0.1910	-0.12633	0.5083
Paternal overprotection	-3.882	1.854	-2.094	0.039	-0.2476	-0.48243	-0.0128
Maternal emotional warmth	-2.137	1.280	-1.669	0.098	-0.2509	-0.54948	0.0476
Maternal overprotection	1.741	1.555	1.120	0.265	0.1364	-0.10532	0.3780
Paternal emotional warmth	1.145	1.264	0.906	0.367	0.1422	-0.16955	0.4540
Number of siblings:							
2 – 1	-1.268	1.703	-0.745	0.458	-0.1722	-0.63129	0.2869
3 – 1	-1.883	2.434	-0.774	0.441	-0.2557	-0.91165	0.4002
4 – 1	-7.813	4.123	-1.895	0.061	-1.0608	-2.17209	0.0504
5 – 1	9.419	5.186	1.816	0.073	1.2789	-0.11911	2.6769

^a Represents reference level

11 Supplementary Table 10. Sibling relationship variables and parenting variables regressed on secondary psychopathy in Study 3; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.207	0.0426	1.169	4	105	0.329
2	0.245	0.0602	0.634	10	99	0.781
3	0.285	0.0811	0.599	14	95	0.860

Model Comparisons

Comparison						
Model	Model	ΔR ²	F	df1	df2	p
1	- 2	0.0176	0.308	6	99	0.931
2	- 3	0.0209	0.539	4	95	0.707

Model 1 Coefficients - LSRP - secondary psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	21.263	3.709	5.733	<.001			
Sex:							
female – male	-0.638	1.194	-0.534	0.594	-0.1294	-0.6099	0.3510
Closeness	-0.226	0.652	-0.346	0.730	-0.0352	-0.2366	0.1663
Conflicts	0.769	0.602	1.277	0.204	0.1251	-0.0692	0.3194
Parental partiality	-1.212	0.918	-1.320	0.190	-0.1306	-0.3267	0.0656

^a Represents reference level

Supplementary Material

Model 2 Coefficients - LSRP - secondary psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	21.1008	6.031	3.499	<.001			
Sex:							
female – male	-0.2494	1.285	-0.194	0.846	-0.0506	-0.5678	0.467
Closeness	0.0998	0.810	0.123	0.902	0.0156	-0.2351	0.266
Conflicts	0.7375	0.635	1.161	0.248	0.1200	-0.0850	0.325
Parental partiality	-1.0956	1.289	-0.850	0.398	-0.1180	-0.3936	0.158
Paternal rejection	0.4947	1.592	0.311	0.757	0.0523	-0.2814	0.386
Maternal rejection	-0.7539	1.317	-0.572	0.568	-0.0990	-0.4421	0.244
Paternal overprotection	-0.8826	1.324	-0.667	0.507	-0.0841	-0.3345	0.166
Maternal emotional warmth	-1.0262	0.928	-1.106	0.271	-0.1801	-0.5031	0.143
Maternal overprotection	1.1183	1.140	0.981	0.329	0.1308	-0.1337	0.395
Paternal emotional warmth	0.4685	0.929	0.504	0.615	0.0870	-0.2554	0.429

^a Represents reference level

Model 3 Coefficients - LSRP - secondary psychopathy

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	20.8661	6.124	3.4073	< .001			
Sex:							
female – male	-0.7442	1.395	-0.5335	0.595	-0.15099	-0.7129	0.411
Closeness	0.5191	0.882	0.5883	0.558	0.08091	-0.1921	0.354
Conflicts	0.7606	0.642	1.1853	0.239	0.12373	-0.0835	0.331
Parental partiality	-0.9268	1.308	-0.7084	0.480	-0.09984	-0.3796	0.180
Paternal rejection	0.8146	1.635	0.4981	0.620	0.08607	-0.2570	0.429
Maternal rejection	-0.3676	1.368	-0.2687	0.789	-0.04825	-0.4048	0.308
Paternal overprotection	-1.3711	1.394	-0.9835	0.328	-0.13069	-0.3945	0.133
Maternal emotional warmth	-1.2647	0.963	-1.3137	0.192	-0.22195	-0.5574	0.113
Maternal overprotection	1.0267	1.169	0.8783	0.382	0.12012	-0.1514	0.392
Paternal emotional warmth	0.4783	0.950	0.5033	0.616	0.08881	-0.2615	0.439
Number of siblings:							
2 – 1	-1.8321	1.281	-1.4308	0.156	-0.37172	-0.8875	0.144
3 – 1	-0.8988	1.830	-0.4913	0.624	-0.18237	-0.9193	0.555
4 – 1	0.0486	3.100	0.0157	0.988	0.00986	-1.2387	1.258
5 – 1	-2.1399	3.899	-0.5488	0.584	-0.43416	-2.0048	1.137

^a Represents reference level

*Values are significant on a < .05 level

Supplementary Material

12 Supplementary Table 11. Sibling relationship variables and parenting variables regressed on MCNS in Study 3; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.239	0.0571	1.59	4	105	0.182
2	0.392	0.1539	1.80	10	99	0.070
3	0.414	0.1712	1.40	14	95	0.167

Model Comparisons

Comparison							
Model	Model	ΔR ²	F	df1	df2	p	
1	- 2	0.0968	1.887	6	99	0.090	
2	- 3	0.0174	0.498	4	95	0.737	

Model 1 Coefficients - MCNS

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	66.390	10.89	6.099	< .001			
Sex:							
female – male	-4.314	3.51	-1.231	0.221	-0.2960	-0.7728	0.1808
Closeness	-0.371	1.91	-0.194	0.846	-0.0196	-0.2195	0.1803
Conflicts	3.070	1.77	1.737	0.085	0.1689	-0.0239	0.3617
Parental partiality	-2.702	2.70	-1.002	0.318	-0.0984	-0.2931	0.0962

^a Represents reference level

Model 2 Coefficients - MCNS

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	37.597	16.92	2.2215	0.029			
Sex:							
female – male	-3.022	3.60	-0.8383	0.404	-0.20732	-0.6981	0.283
Closeness	0.119	2.27	0.0522	0.958	0.00626	-0.2316	0.244
Conflicts	2.239	1.78	1.2563	0.212	0.12315	-0.0714	0.318
Parental partiality	1.003	3.62	0.2772	0.782	0.03653	-0.2250	0.298
Paternal rejection	5.568	4.47	1.2469	0.215	0.19896	-0.1176	0.516
Maternal rejection	-1.944	3.70	-0.5260	0.600	-0.08631	-0.4119	0.239
Paternal overprotection	-0.688	3.71	-0.1851	0.853	-0.02217	-0.2597	0.215
Maternal emotional warmth	-2.560	2.60	-0.9836	0.328	-0.15193	-0.4584	0.155
Maternal overprotection	8.092	3.20	2.5306	0.013	0.32016	0.0691	0.571
Paternal emotional warmth	2.034	2.61	0.7801	0.437	0.12772	-0.1972	0.453

^a Represents reference level

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Model 3 Coefficients - MCNS

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	35.623	17.20	2.0713	0.041			
Sex:							
female – male	-1.737	3.92	-0.4433	0.659	-0.1192	-0.6527	0.414
Closeness	0.469	2.48	0.1892	0.850	0.0247	-0.2346	0.284
Conflicts	2.228	1.80	1.2363	0.219	0.1226	-0.0742	0.319
Parental partiality	0.930	3.67	0.2533	0.801	0.0339	-0.2318	0.300
Paternal rejection	6.120	4.59	1.3326	0.186	0.2187	-0.1071	0.544
Maternal rejection	-2.592	3.84	-0.6747	0.502	-0.1151	-0.4536	0.224
Paternal overprotection	-0.805	3.92	-0.2056	0.838	-0.0259	-0.2765	0.225
Maternal emotional warmth	-2.931	2.70	-1.0840	0.281	-0.1739	-0.4925	0.145
Maternal overprotection	8.793	3.28	2.6784	0.009	0.3479	0.0900	0.606
Paternal emotional warmth	2.187	2.67	0.8194	0.415	0.1373	-0.1954	0.470
Number of siblings:							
2 – 1	-0.319	3.60	-0.0888	0.929	-0.0219	-0.5117	0.468
3 – 1	-3.068	5.14	-0.5971	0.552	-0.2105	-0.9104	0.489
4 – 1	-3.874	8.71	-0.4450	0.657	-0.2658	-1.4515	0.920
5 – 1	12.367	10.95	1.1292	0.262	0.8485	-0.6432	2.340

^a Represents reference level

*Values are significant on a < .05 level

12 Supplementary Table 11. Sibling relationship variables and parenting variables regressed on BPI in Study 3; results of hierarchical multiple linear regressions.

Model Fit Measures

Model	R	R ²	Overall Model Test			
			F	df1	df2	p
1	0.380	0.144	4.42	4	105	0.002
2	0.448	0.200	2.48	10	99	0.011
3	0.484	0.234	2.08	14	95	0.020

Model Comparisons

Comparison							
Model	Model	ΔR ²	F	df1	df2	p	
1	- 2	0.0562	1.16	6	99	0.335	
2	- 3	0.0339	1.05	4	95	0.384	

Model 1 Coefficients - BPI

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	92.580	12.51	7.403	< .001			
Sex:							
female – male	-5.873	4.03	-1.458	0.148	-0.3341	-0.7884	0.1201
Closeness	-0.706	2.20	-0.321	0.749	-0.0309	-0.2213	0.1596
Conflicts	4.422	2.03	2.177	0.032	0.2017	0.0180	0.3854
Parental partiality	-8.887	3.10	-2.870	0.005	-0.2685	-0.4539	-0.0830

^a Represents reference level

Supplementary Material

Model 2 Coefficients - BPI

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	69.905	19.84	3.5236	< .001			
Sex:							
female – male	-5.440	4.23	-1.2873	0.201	-0.30950	-0.7866	0.1676
Closeness	0.110	2.67	0.0414	0.967	0.00482	-0.2264	0.2360
Conflicts	3.827	2.09	1.8320	0.070	0.17457	-0.0145	0.3637
Parental partiality	-5.164	4.24	-1.2176	0.226	-0.15600	-0.4102	0.0982
Paternal rejection	0.358	5.24	0.0683	0.946	0.01060	-0.2972	0.3184
Maternal rejection	1.245	4.33	0.2874	0.774	0.04584	-0.2707	0.3624
Paternal overprotection	3.804	4.35	0.8734	0.385	0.10167	-0.1293	0.3326
Maternal emotional warmth	-2.553	3.05	-0.8366	0.405	-0.12563	-0.4236	0.1723
Maternal overprotection	3.979	3.75	1.0614	0.291	0.13055	-0.1135	0.3746
Paternal emotional warmth	0.321	3.06	0.1051	0.916	0.01673	-0.2991	0.3326

^a Represents reference level

Model 3 Coefficients - BPI

Predictor	Estimate	SE	t	p	Stand. Estimate	95% Confidence Interval	
						Lower	Upper
Intercept ^a	67.066	19.93	3.3643	0.001			
Sex:							
female – male	-4.901	4.54	-1.0794	0.283	-0.2789	-0.7917	0.234
Closeness	1.645	2.87	0.5729	0.568	0.0719	-0.1773	0.321
Conflicts	3.839	2.09	1.8380	0.069	0.1751	-0.0140	0.364
Parental partiality	-4.765	4.26	-1.1189	0.266	-0.1439	-0.3993	0.111
Paternal rejection	2.260	5.32	0.4245	0.672	0.0670	-0.2462	0.380
Maternal rejection	1.452	4.45	0.3261	0.745	0.0534	-0.2720	0.379
Paternal overprotection	1.907	4.54	0.4203	0.675	0.0510	-0.1898	0.292
Maternal emotional warmth	-3.954	3.13	-1.2616	0.210	-0.1946	-0.5007	0.112
Maternal overprotection	4.616	3.81	1.2130	0.228	0.1514	-0.0964	0.399
Paternal emotional warmth	0.793	3.09	0.2565	0.798	0.0413	-0.2784	0.361
Number of siblings:							
2 – 1	-6.070	4.17	-1.4562	0.149	-0.3453	-0.8161	0.125
3 – 1	-5.300	5.96	-0.8899	0.376	-0.3015	-0.9743	0.371
4 – 1	-0.581	10.09	-0.0576	0.954	-0.0331	-1.1727	1.107
5 – 1	13.468	12.69	1.0610	0.291	0.7663	-0.6675	2.200

^a Represents reference level